User Manual

Quick Start Web Panel with Micro Browser

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1 Important Notes

1.1 Symbols

The symbols in this manual are used to draw your attention on notes and dangers.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER
This symbol is used to refer to instructions which, if ignored or not carefully followed, will result in death or serious injury.

WARNING
This symbol is used to refer to instructions which, if ignored or not carefully followed, could result in death or serious injury.

CAUTION
This symbol is used to refer to instructions which, if ignored or not carefully followed, could result in minor or moderate injury.

NOTICE
This symbol and the accompanying text alerts the reader to a situation which may cause damage or malfunction to the device, either hardware or software, or surrounding property.

Reference to source of information
This symbol refers to detailed sources of information on the current topic.

1.2 Safety Notes

- Read this manual carefully before using the operating device. Keep this manual in a place where it is always accessible to all users.
- Proper transportation, handling and storage, placement and installation of this product are prerequisites for its subsequent flawless and safe operation.
- This user manual contains the most important information for the safe operation of the device.
- The user manual, in particular the safety notes, must be observed by all personnel working with the device.
- Observe the accident prevention rules and regulations that apply to the operating site.
- Installation and operation must only be carried out by qualified and trained personnel.

1.3 Intended Use

– The device is designed for use in the industry.
– The device is state-of-the art and has been built to the latest standard safety requirements. However, dangerous situations or damage to the machine itself or other property can arise from the use of this device.
– The device fulfills the requirements of the EMC directives and harmonized European standards. Any modifications to the system can influence the EMC behavior.

1.4 Target Group

All configuration, programming, installation, commissioning, operating and maintenance work in connection with the automation system must be performed by trained personnel only (e.g. qualified electricians, electrical engineers, etc.).

The configuration and programming personnel must be familiar with the safety concepts of automation technology.

The operating personnel must have been trained in handling the controller and be familiar with the operating instructions.

The installation, commissioning and maintenance personnel must have an education which entitles them to work on automation systems.

2 Generally

2.1 Purpose of this quick start guide

This quick start guide helps users starting to work with the web panel by visualizing a simple example project based on the ILC 130 starter kit.

This quick start guide explains how to:

– Connect and start up the web panels
– Establish communication between web panel and I/O controller
– Parameterize the I/O controller
– Display an existing visualization project on the web panel.

It is assumed the user has knowledge and experience in the operation of PCs and Microsoft Windows operating systems.
Please refer to the documentation ILC 130 starter kit, PC WorX and WebVisit, to clarify any questions that are not dealt with here or when working on larger projects.

2.2 Hardware/software requirements

Operating device:

- TP57AT
- Micro browser version > 1.5.15.122
- 24 V DC power supply and supply voltage cable

Project environment:

- ILC 130 STARTERKIT, Phoenix Contact Art.-Nr. 2988515
- CD ILC 130 STARTERKIT
- Ethernet switch, Phoenix Contact Order No. 2891152
- Ethernet patch cable, cross over, Phoenix Contact Order No. 2744843

Development environment:

- PC for configuration (development computer) with a CPU of at least 800 MHz, main memory of 512 MB minimum,
- Java capable web browser (e.g. Java Standard Edition SE6 or higher) and 1x Ethernet (TCP/IP) interface,
- Windows XP version > SP2
- PC WorX Express
- WebVisit Basic
- Monitor, keyboard and mouse

The software can be downloaded as a demo version at www.phoenixcontact.com (AX SW SUITE DEMO CD, Order No. 2985660). Please use Microsoft Internet Explorer 5 or later for software installation.

3 Commissioning

3.1 Connecting the Device

The supply voltage is supplied via connector X1.

Refer to the technical data for the permissible supply voltage of the operating device.

The device has reverse polarity protection. In case of wrong polarity, the device will not operate.

This is a protection class I device. For safe operation, safety extra-low voltage (SELV) in accordance with DIN EN 61131 must be used for the supply voltage.

Connector in the operating device: 3 pin connector

A suitable female connector strip is supplied.

Table 3-1 Pin assignment supply voltage

Pin	Designation	Function
1	⏚	Low-Noise Ground
2	0 V	Supply Voltage 0 V
3	24 VDC	Supply Voltage 24 VDC

NOTICE: Damage
Cables with finely stranded conductors with a minimum cross-section of 0.75 mm² (18 AWG) and a maximum cross-section of 2.5 mm² (14 AWG) must be used for the supply voltage.

NOTICE: Damage
A separate conductor must always be provided for the protective grounding. The conductor must have a minimum cross-section of 1.5 mm² (16 AWG) and must be kept as short as possible.

DANGER: Hazardous voltages
Hazardous voltages can exist inside electrical installations that can pose a danger to humans. Coming in contact with live parts may result in electric shock!

Use the following procedure to connect the device to the supply voltage:

1. Strip approx. 30 mm (1.181") off the outer cable sheath and approx. 5 mm (0.197") off the wires.

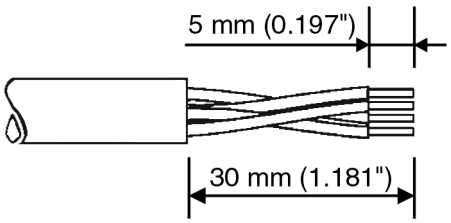

Figure 3-1 Preparing the cable

2. Fit the wires with wire end ferrules and connect the wires to the connector.

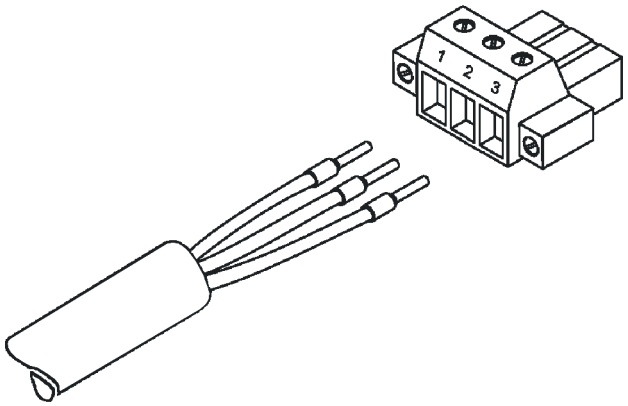

Figure 3-2 Connecting the female connector strip

3. Plug the female connector strip onto connector X1.

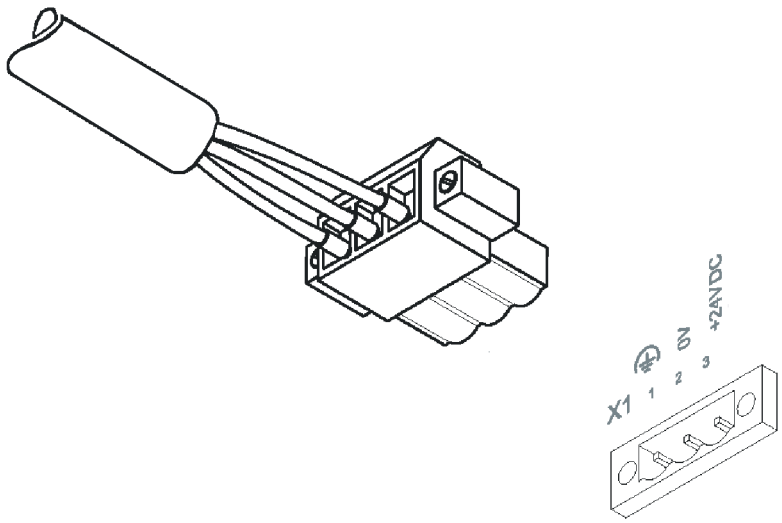

Figure 3-3 Female connector strip is plugged on

4. Secure the female connector strip in place with a screw-type locking to prevent it from slipping out.

3.2 Switching On

The web panel starts as soon as the supply voltage is connected. The web panel is equipped with the Windows CE operating system suitable for the micro browser. The micro browser uses the preset IP path (IP address of the web servers) and tries to display an HTML page.

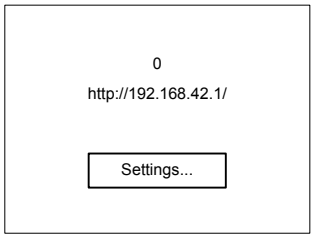

Figure 3-4 Display after startup

A web visualization can only be displayed when web panel and web server of the controller are in the same network. Please refer to Section 3.4 for information on basic settings.

3.3 Operate

The panel is operated via the touch function of the display by directly selecting the button that appears on the display.

NOTICE: Damage
Pointed or sharp objects, such as pens or fingernails, can lead to irreparable damages of the touch screen. Exclusively therefore use the fingertips or the aids indicated in the technical data for the operation.

3.4 Basic settings

Data exchange between operating device and connected I/O takes place over the standardized Ethernet interface. The following parameters have to be assigned to ensure that the web panel is detected in the network.

- Exit the start display by clicking the "Settings..." button.

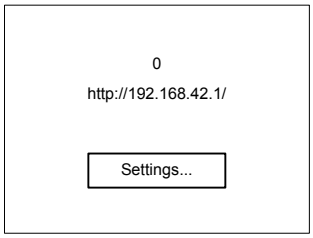

Figure 3-5 Start display

You enter the menu "Settings".

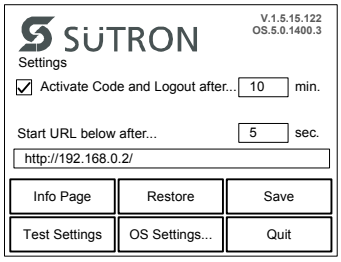

Figure 3-6 Menu window "Settings"

Please note that the "Code Activate" button is disabled. When you enable this button, the menu window is protected with the password "+ - + -" of the micro browser.

3.4.1 Assigning the start URL of the target device

In the menu window you can define the target path (start URL) for the micro browser. The start URL comprises the IP address of the web server (e.g. of an ILC) and optionally the HTML homepage that is to be opened.

- Now enter the IP address of the target device into the corresponding line of the display and the start HTML file of the project as follows:
  http://192.168.0.2/entry.html

By default, Phoenix Contact controllers are delivered with the preset IP address "192.168.000.002". When creating the HTML file, WebVisit assigns the name of the homepage "entry.html" by default.

The web panel must be in the same network as the controller. Set IP address and subnet mask accordingly. Should you have any questions, please contact your network administrator.

3.4.2 Assigning the IP address of the web panel

It does not suffice to define the target path to display the web visualization.

1. To make sure that web panel and controller are in the same network, follow the path and assign the IP address of the web panel (e.g. "192.168.000.005"), as well as its subnet mask "255.255.255.000".

All addresses of the Network Settings have to be entered in the format "xxx.xxx.xxx.xxx".
Numbers smaller than 100 have to be filled up with leading zeros.
(e.g.: 192.168.42.1 -> 192.168.042.001)

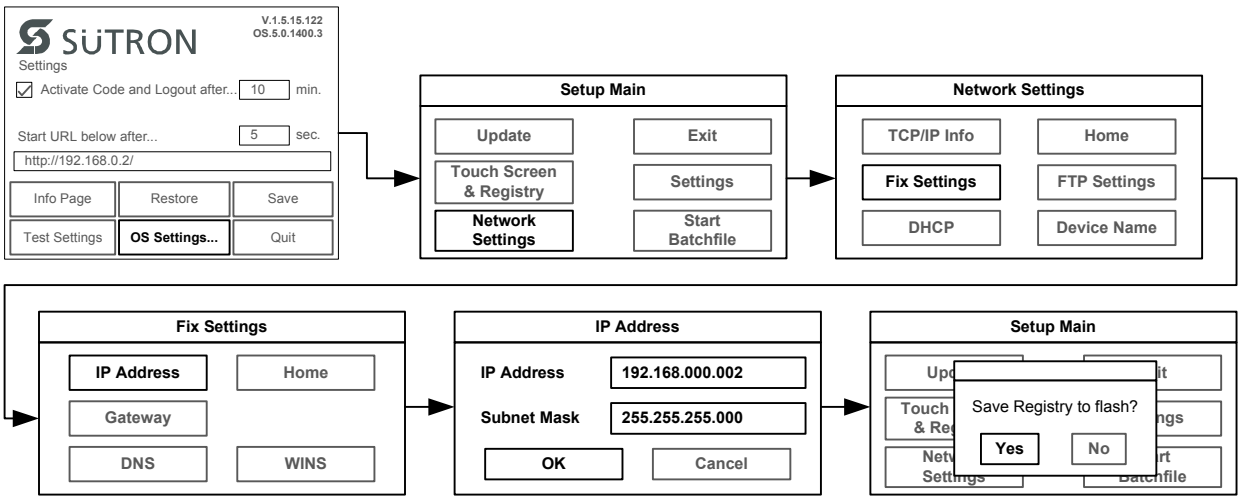

Figure 3-7 Setting the IP address and subnet mask

2. Confirm with "OK" and return to the start screen.
   (Home -> Home -> Exit)
3. Confirm the "Save Registry to flash" message with "Yes".
4. Perform a reset by switching off the supply voltage for a short time.

If you have stored a visualization project on the controller, this project will be displayed after the reset.

4 Visualizing with the web panel

4.1 Structure of the example project

The complete starter kit is supplied fully pre-assembled. Try out the starter kit straight away by connecting the mains cable to the power supply unit on the back of the board and to the 230 V AC supply voltage.

- Supply operating device and FL SWITCH with a voltage of 24 V DC.
- Connect the devices require for the example project (TP57AT, ILC 130 Starterkit, FL SWITCH SFN 5TX) with an Ethernet patch cable according to Figure 4-1.

See device-specific user documentation: CD ILC 130 STARTERKIT or at www.phoenixcontact.com.
For additional examples of bus configurations, programs, and visualizations, please refer to the software CDs for PC WorX and WebVisit or visit the Download Center at www.phoenixcontact.com for example.

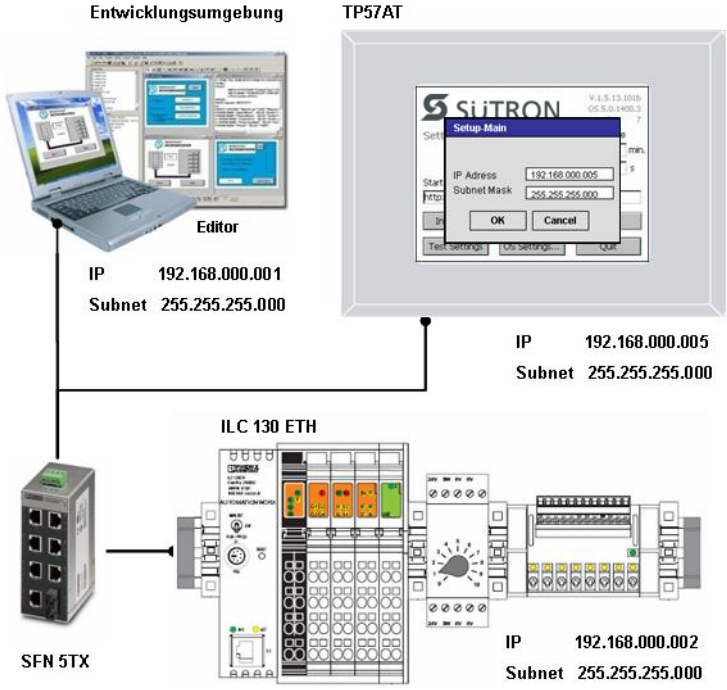

Figure 4-1 Network structure of the example project

4.2 Setting up the development environment

After you have installed the device, this section explains how to establish communication in the network between development environment and I/O controller.

To do this, proceed as follows:

1. Right-click to select the properties of the network environment (My Network Places) and afterwards the properties of your network card.

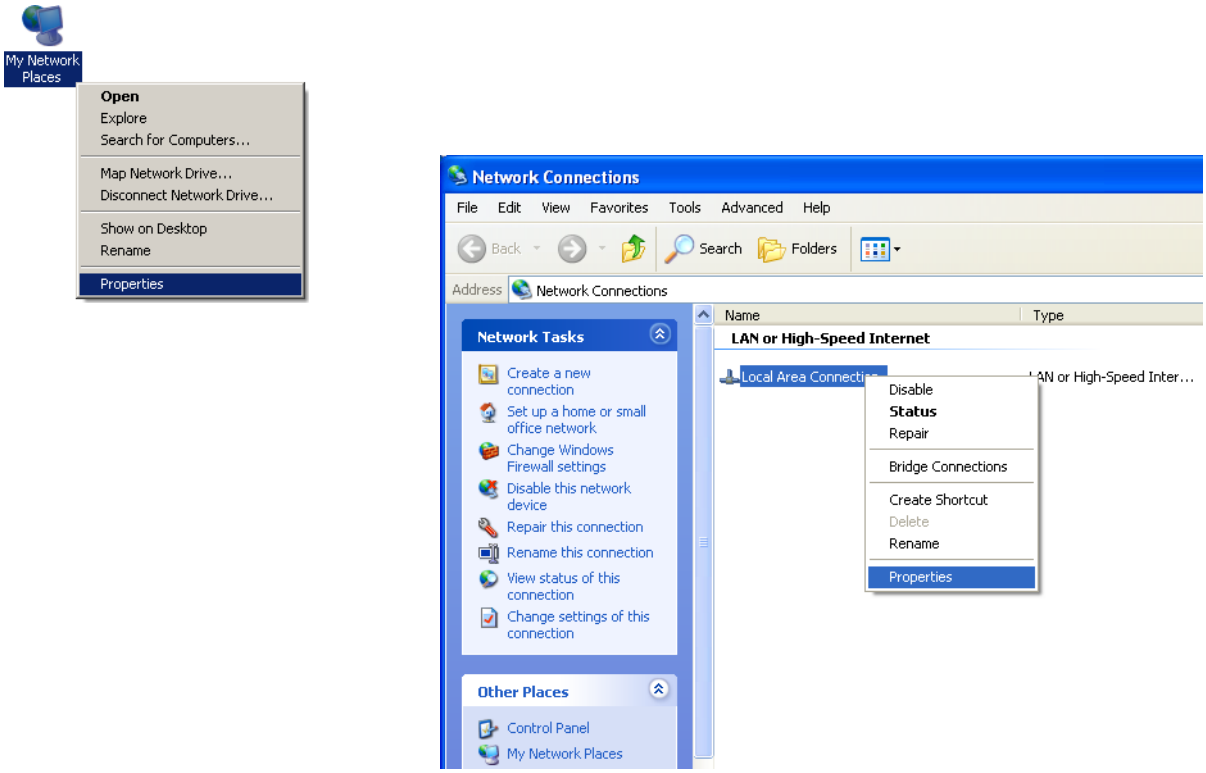

Figure 4-2 Network properties of the development environment

2. In the "General" tab, select "Internet Protocol (TCP/IP)" and click the properties button again.
3. In the window that appears, activate "Use the following IP address".
4. Use the following preliminary IP address for your development computer: **192.168.000.001**.

5. The required subnet mask will be displayed automatically. If this is not the case, enter the following subnet mask manually: **255.255.255.000**.

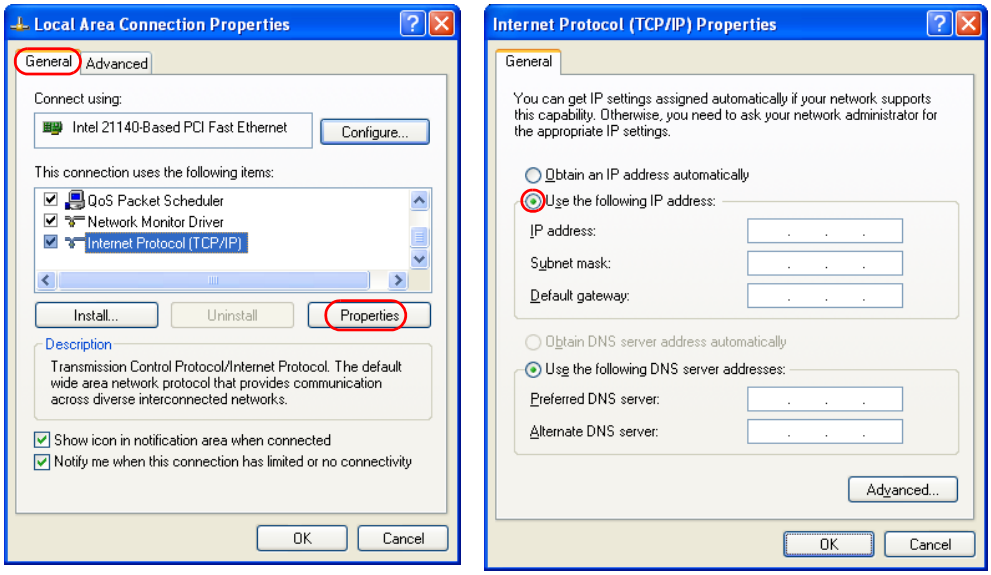
Local Area Connection Properties
General
Advanced
Connect using:
Intel 21140-Based PCI Fast Ethernet
Configure...
This connection uses the following items:
QoS Packet Scheduler
Network Monitor Driver
Internet Protocol (TCP/IP)
Install...
Uninstall
Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in notification area when connected
Notify me when this connection has limited or no connectivity
OK
Cancel
Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Figure 4-3 IP settings of the development environment

6. Confirm with "OK" and close all windows of the network environment.

Note the proxy settings of you PC web browser (e.g., Internet Explorer).

1. Open the LAN settings on the "Connection" tab of the Internet Options window.
2. Disable the "Use automatic configuration script" checkbox.

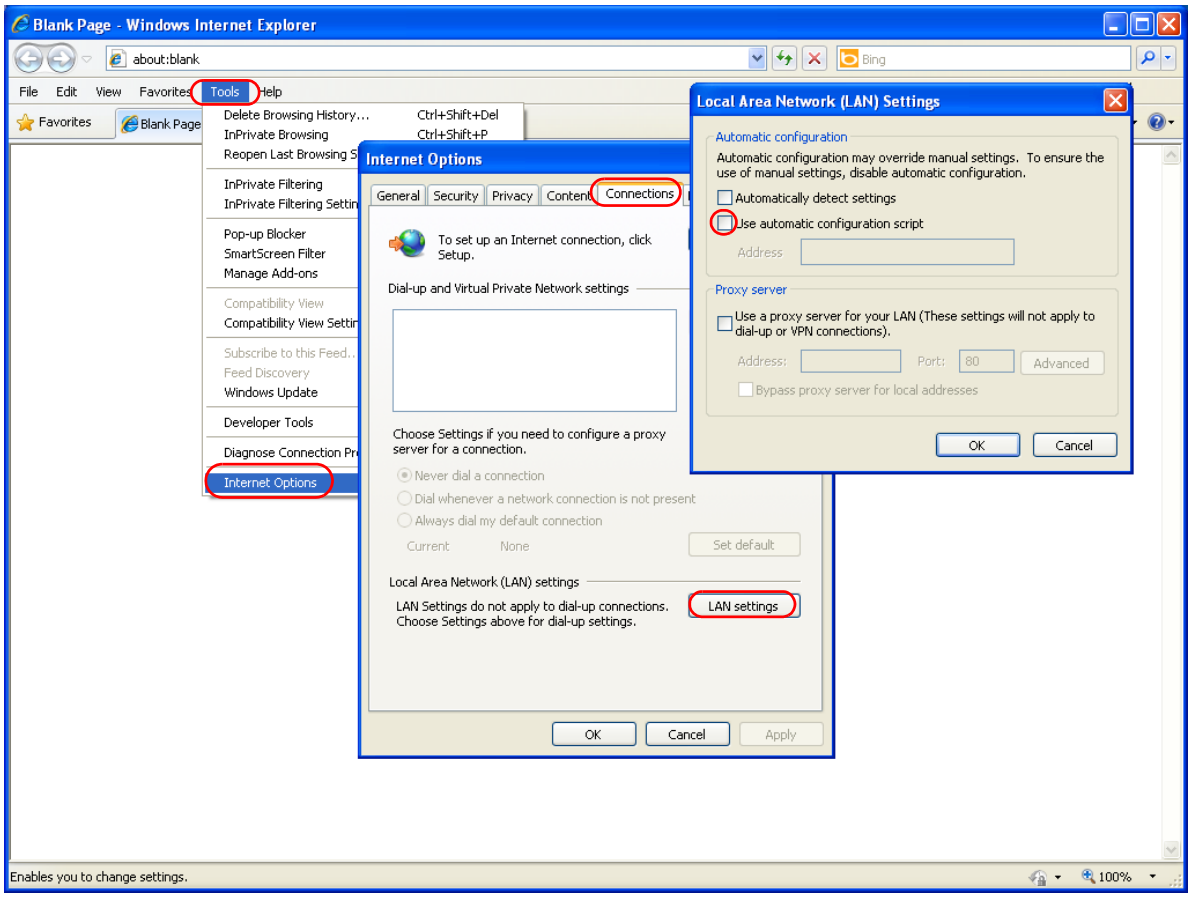
Blank Page - Windows Internet Explorer
about:blank
File Edit View Favorites Tools Help
Favorites
Blank Page
Delete Browsing History... Ctrl+Shift+Del
InPrivate Browsing Ctrl+Shift+P
InPrivate Filtering
Pop-up Blocker
SmartScreen Filter
Manage Add-ons
Compatibility View
Subscribe to this Feed...
Feed Discovery
Windows Update
Developer Tools
Internet Options
Internet Options
General Security Privacy Content Connections
To set up an Internet connection, click Setup.
Dial-up and Virtual Private Network settings
Choose Settings if you need to configure a proxy server for a connection.
Never dial a connection
Dial whenever a network connection is not present
Always dial my default connection
Current None
Set default
Local Area Network (LAN) settings
LAN Settings do not apply to dial-up connections. Choose Settings above for dial-up settings.
LAN settings
OK
Cancel
Apply
Local Area Network (LAN) Settings
Automatic configuration
Automatic configuration may override manual settings. To ensure the use of manual settings, disable automatic configuration.
Automatically detect settings
Use automatic configuration script
Address
Proxy server
Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections).
Address: Port: 80 Advanced
Bypass proxy server for local addresses
OK
Cancel
Enables you to change settings.
100%

Figure 4-4 Proxy settings of the Internet Explorer

4.3 PC WorX and parameterizing the ILC starter kit

PC WorX is the common automation software for all PC-based and embedded controllers by Phoenix Contact. This software combines individual hardware elements (e.g., sensors, actuators, I/O devices) to form a complete automation solution.

Here it is defined which data is required during operation and how it is processed by the controller (e.g. ILC 130). Thus PC WorX starts every visualization. To make the introduction process easier, a functional example program will be used, see Chapter “Loading and parameterizing the program“ on page 4-6.

The individual elements are assigned on the development computer. The program is downloaded over Ethernet to the controller, see Chapter “Downloading the program to the controller“ on page 4-10. To ensure that the program can be downloaded to the controller, the computer must also be in the same network as web panel and controller, see Chapter “Assigning the IP address of the web panel“ on page 3-6.

4.3.1 The PC WorX user interface

For better orientation and navigation in PC WorX, this section briefly describes the PC WorX user interface.

The user interface consists of the following main components:
Menu bar, toolbars, main window, and status bar.
The contents of the main window depend on the workspace.

Figure 4-5 The PC WorX user interface

The program contains several toolbars with different icons, which enable frequently used operations to be executed quickly. Alternatively, these operating steps can be called via menu items or predefined shortcuts. The toolbars that are displayed vary depending on the workspace that is set.

When the mouse pointer is placed over an icon (without clicking on it), a tool tip appears. The tool tip displays the name of the current icon. In addition, a short function description appears in the status bar.

The workspace can be changed via the icons in the toolbar:

Activate IEC programming workspace

Activate bus configuration workspace.

Activate process data assignment workspace

Frequently used icons for compiling and debugging

Make (compile project; corresponds to "Build, Make" in the menu bar)

Switch debug mode on/off.

Display project control dialog box

4.3.2 Loading and parameterizing the program

The complete example program is available in compressed format as the"FirstSteps_ILC130.zwe" file at www.suetron.com/support/software.

1. Save the "FirstSteps_ILC130.zwe" file on your PC, e.g., under the default path for PC WorX Express "C:\Program Files\Phoenix Contact\Software Suite...\Projects".
2. Select the "Open" button in the message that appears.

PC WorX Express is started.

3. Confirm the prompt asking whether the project should be extracted to the directory containing the zwe file with "Yes" if the file is to be extracted to this directory. Or select a different directory. PC WorX Express extracts the file automatically.
4. If PC WorX Express prompts you to overwrite layouts (e.g., page layouts, etc.) or bitmaps, confirm this prompt with "No to all". Once PC WorX Express has unzipped the project, it is available for you to view/edit.

The following window appears:

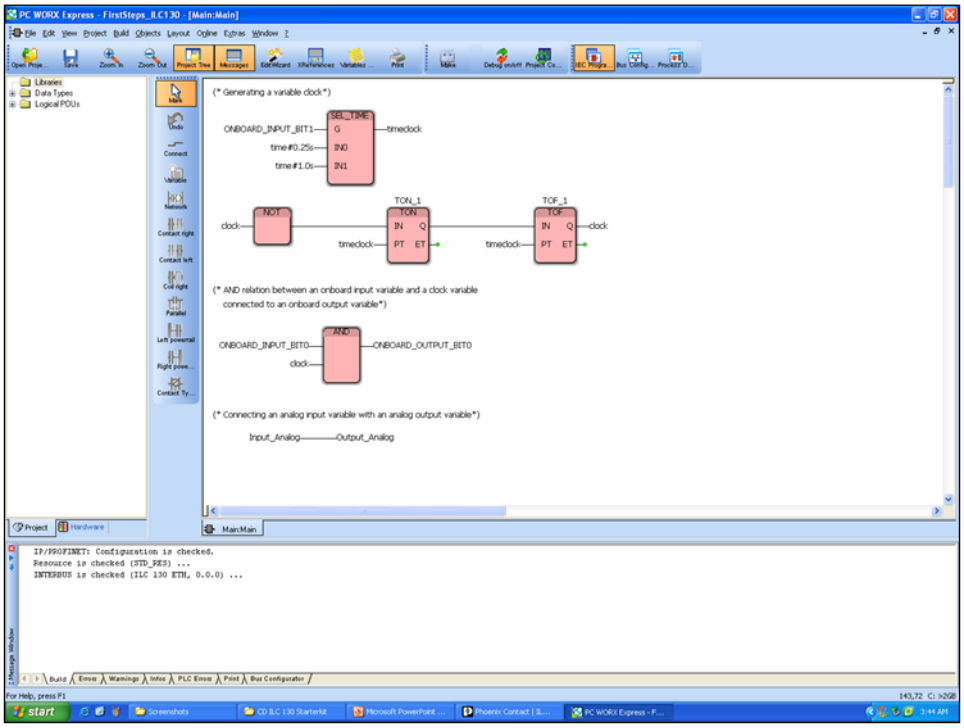

Figure 4-6 PC WorX Express-FirstSteps_ILC130

5. Select "Extras, BootP/SNMP/TFTP Configuration...".

6. Activate the "BootP_Server active" checkbox and confirm with "OK".

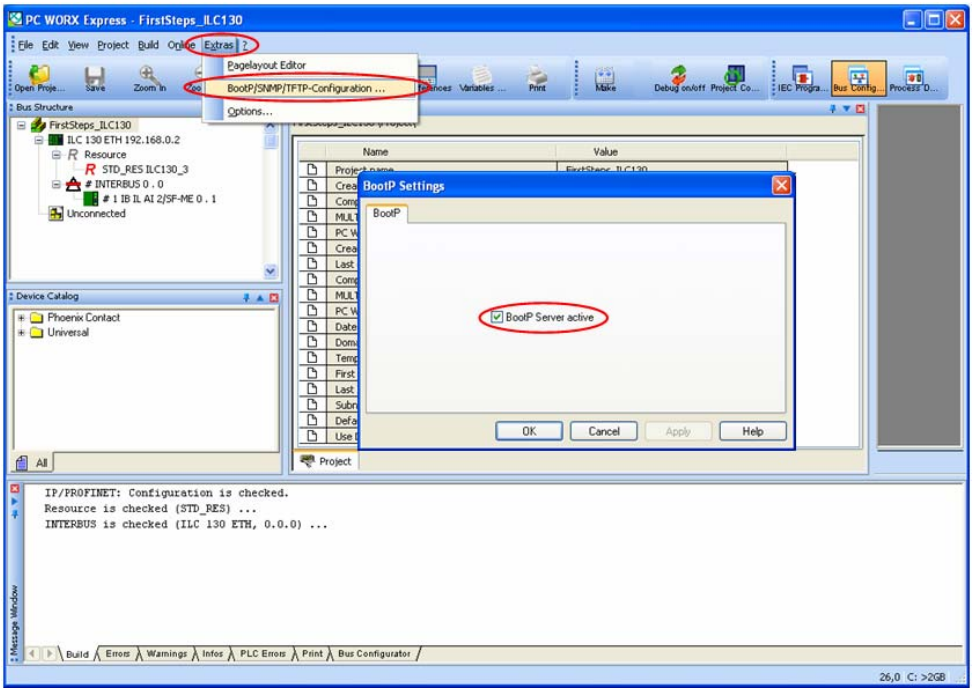

Figure 4-7 BootP settings

The program information is set in the bus configuration workspace.

7. Activate the "Bus configuration" icon in the toolbar.

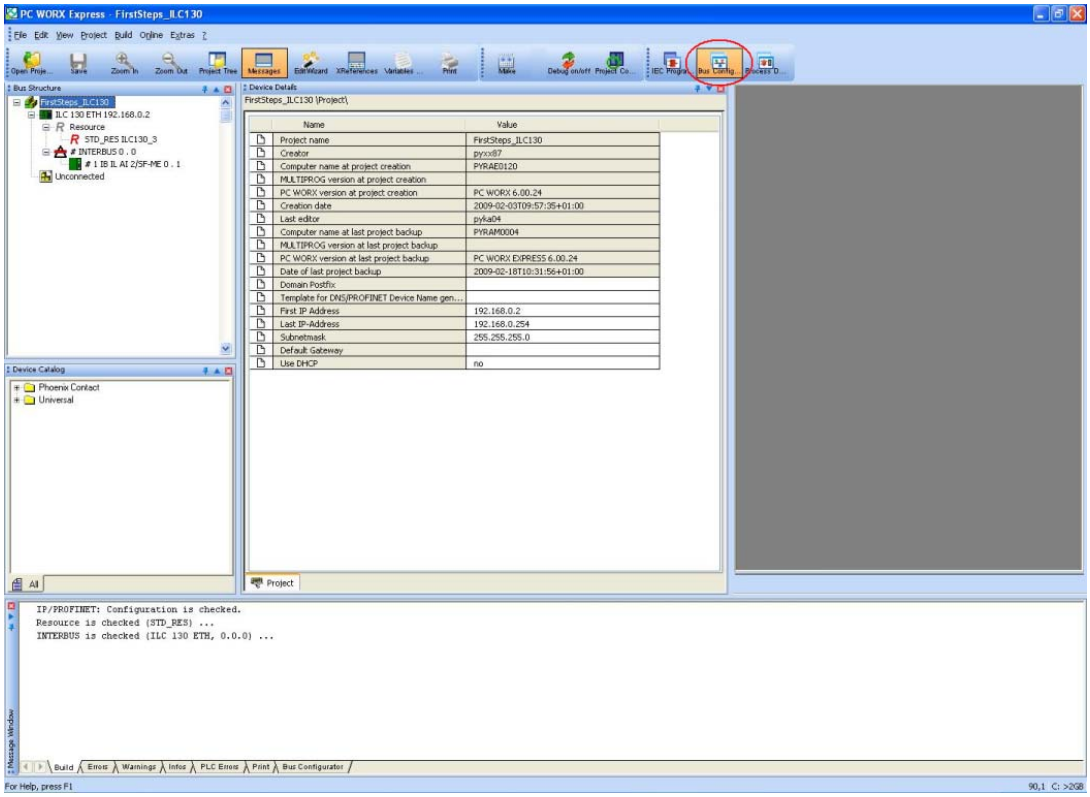
PC WORX Express - FirstSteps_ILC130
IP/PROFINET: Configuration is checked.
Resource is checked (STD_RES) ...
INTERBUS is checked (ILC 130 ETH, 0.0.0) ...

Figure 4-8 Activating the bus configuration

8. In the bus configuration select the I/O controller node, in the example "ILC 130 ETH".

9. Select the "IP Settings" tab in the "Device Details" window.

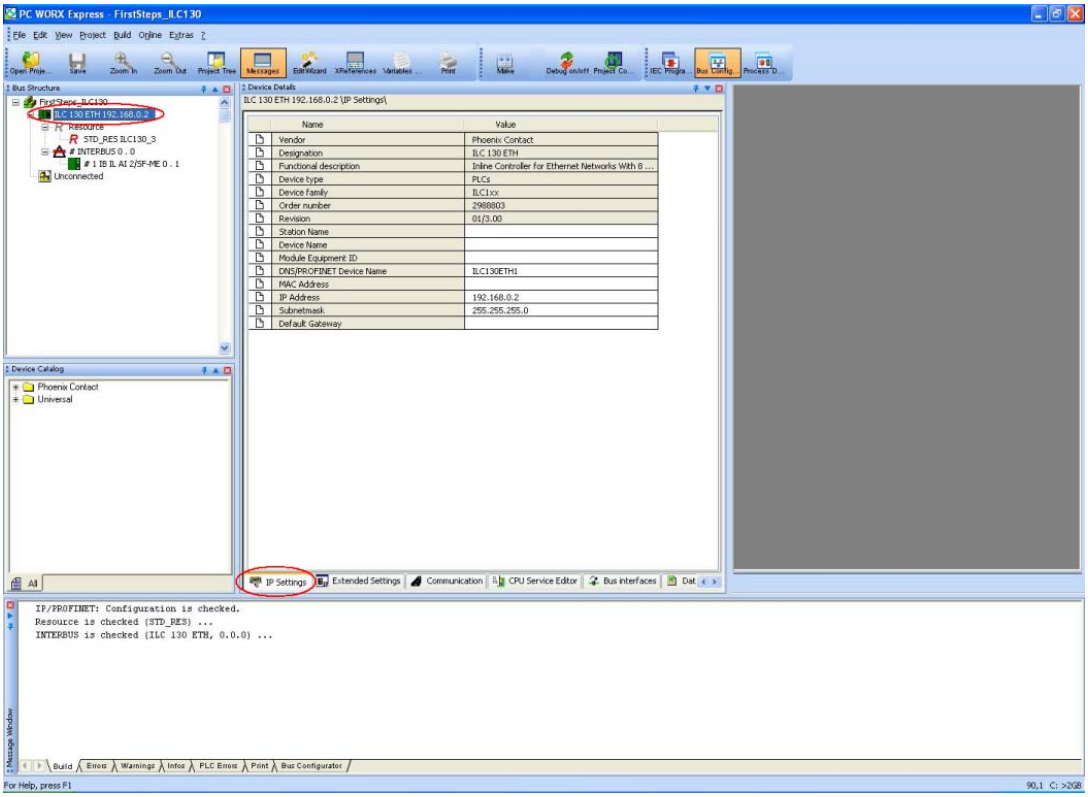
PC WORX Express - FirstSteps_ILC130
IP/PROFINET: Configuration is checked.
Resource is checked (STD_RES) ...
INTERBUS is checked (ILC 130 ETH, 0.0.0) ...

Figure 4-9 Selecting the IP settings of the I/O controller

10. Enter the MAC address of the I/O controller. It is printed on the device and starts with 00.A0.45.

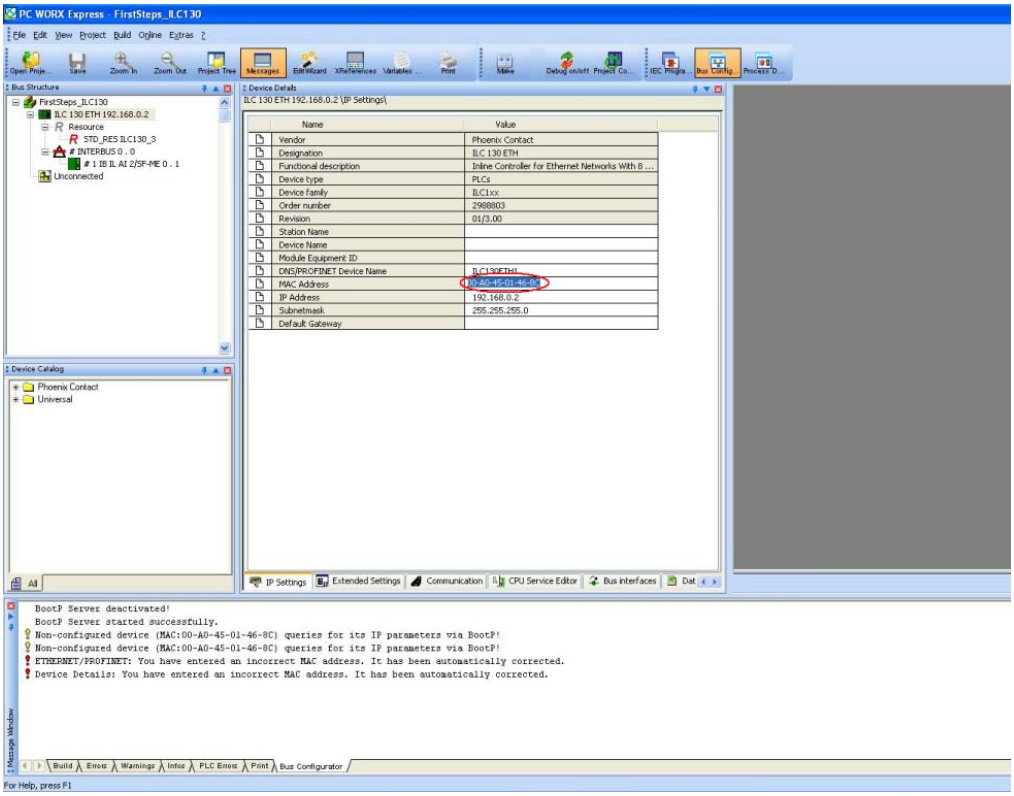
PC WORX Express - FirstSteps_ILC130
BootP Server deactivated!
BootP Server started successfully.
Non-configured device (MAC:00-A0-45-01-46-8C) queries for its IP parameters via BootP!
Non-configured device (MAC:00-A0-45-01-46-8C) queries for its IP parameters via BootP!
ETHERNET/PROFINET: You have entered an incorrect MAC address. It has been automatically corrected.
Device Details: You have entered an incorrect MAC address. It has been automatically corrected.

Figure 4-10 Entering the MAC address of the I/O controller

11. Perform a cold restart for the I/O controller. To do this, switch the supply voltage off and then on again after around 2 seconds.

The controller is temporarily assigned the IP address, which is specified in the program for the I/O controller. The following message appears in the message window in the "Bus Configurator" tab.

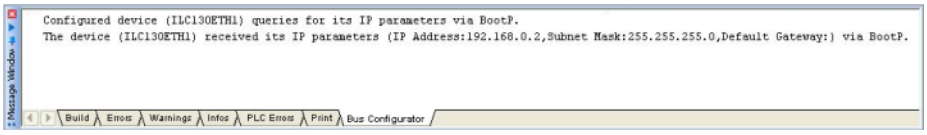

Figure 4-11 Message window following BootP

The IP address is now permanently stored on the I/O controller Flash memory.

4.3.3 Downloading the program to the controller

After you have loaded the program and parameterized the I/O controller, the program must be downloaded to the controller.

1. Select "Make" from the toolbar.

Figure 4-12 Downloading the program to the controller

2. If errors occur when compiling, remove the errors and repeat the compiling process until it is completed successfully. Error messages must be removed. Warning messages do not have to be removed.

The results of the compiling process are displayed in the message window together with details of the number of errors and warnings. When downloading the program, the desired configuration is transmitted and activated.

3. Open the project control dialog and click on the "Stop" button.
4. Send the project by clicking the "Send" button.
5. The program is now in the main memory of the I/O controller.
6. Check whether the controller is set to run mode.
7. In order to activate the program, it is necessary to perform a cold restart. Complete the sending by clicking on "cold" and close the "STD_RES" window.

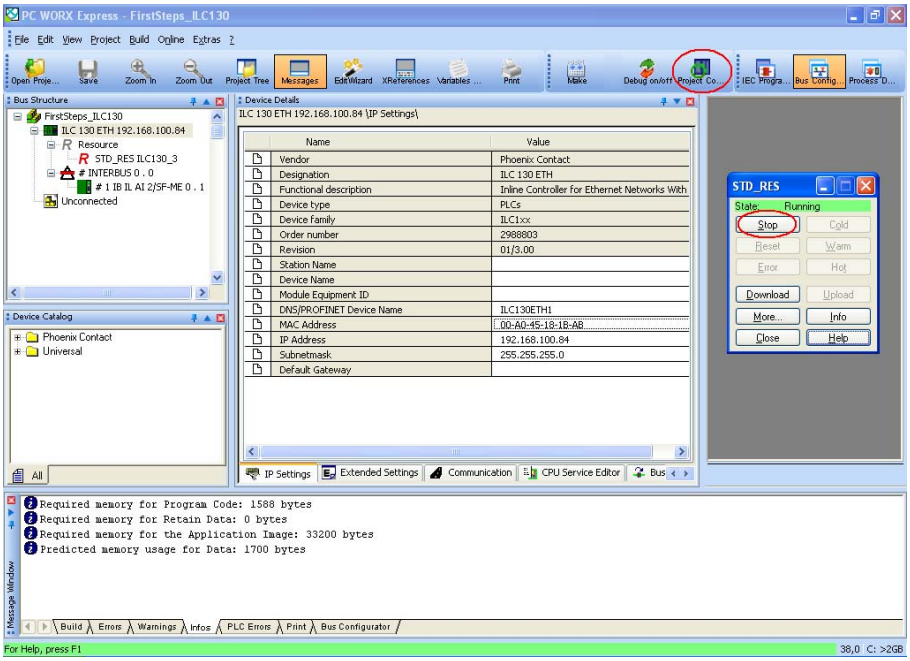

Figure 4-13 Project control dialog

The ILC 130 ETH has been started up successfully if the green FR LED is on.

4.4 WebVisit and parameterization of the visualization project

WebVisit is a software tool used to generate web pages. With this software you can operate and monitor your automation project via a Java-compatible standard browser.

The user interface of the web panel is defined here and process data from PC WorX is assigned to the graphic objects of the visualization, e.g., buttons for I/O commands. To make the introduction process easier, a complete visualization project will be used, see Chapter “Loading and parameterizing the visualization project“ on page 4-12.

The individual objects are assigned on the development computer. The visualization is transmitted over Ethernet to the web server of the controller, see Chapter “Downloading the visualization project to the controller“ on page 4-15. The web panel browser accesses this data via the web server of the controller. Only interpretation of this data allows successful visualization of the project.

To ensure that the program can be downloaded to the controller, the computer must also be in the same network as the web panel and the controller, see Chapter “Assigning the IP address of the web panel“ on page 3-6.

4.4.1 WebVisit user interface

For better orientation and navigation in WebVisit, this section briefly describes the WebVisit user interface.

The user interface appears when WebVisit is started. The main window is divided into two sections. All open project files are displayed on the left-hand side. On the right-hand side, the graphic views for the open project are displayed and can be edited.

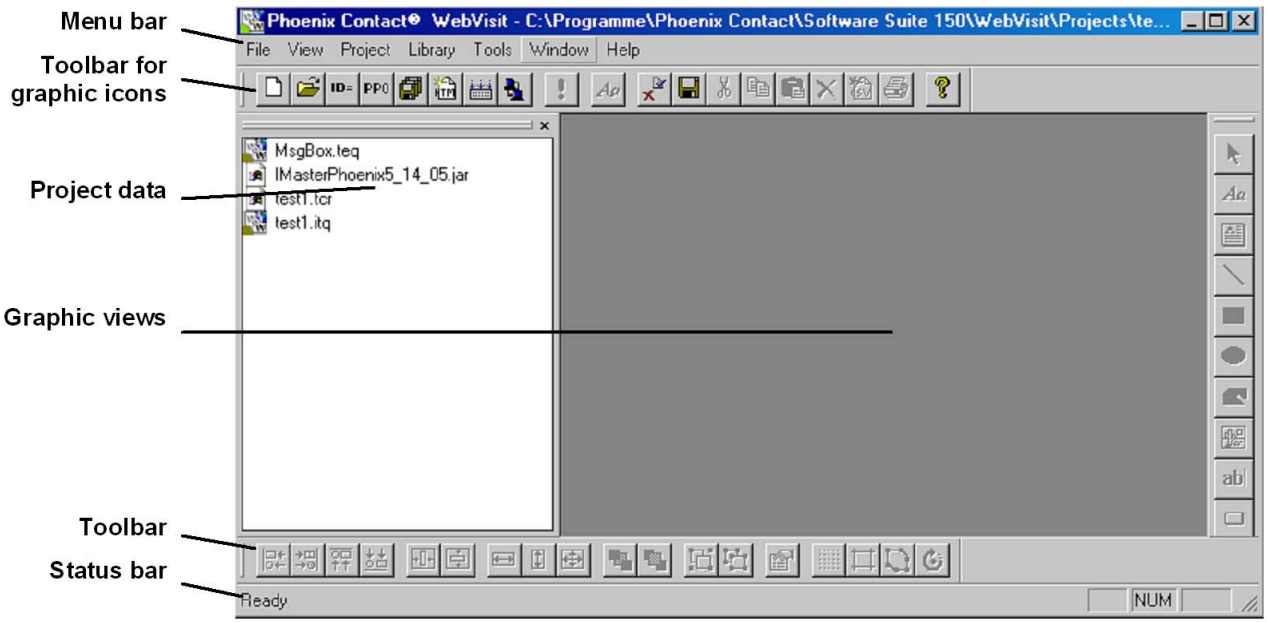

Figure 4-14 WebVisit user interface

4.4.2 Loading and parameterizing the visualization project

The visualization project is available in compressed format as "FirstSteps_ILC130.exe" at www.suetron.com/support/software.

1. Save the compressed WebVisit project (web server project) from the CD ILC 130 STARTERKIT to your hard disk (FirstSteps_ILC130.exe).
2. Select the "Open" button in the messages that appear.
3. Extract the file to the project directory of your WebVisit installation. Standard installation path: C:\Program Files\WebVisit\Projects\Visu_FirstSteps.
4. Start WebVisit.
5. Open the project ("FirstSteps_ILC130.prj file) in WebVisit via the "File/Open-project..." menu item.

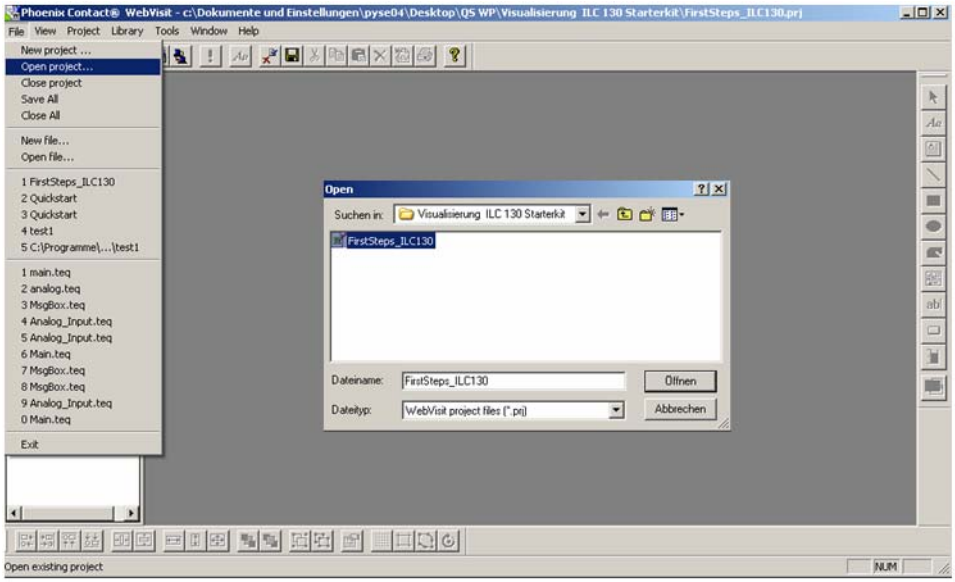

Figure 4-15 Open a visualization project

The visualization project was loaded into WebVisit. The left workspace shows the various project files.

6. Double-click the "main.teq" file.

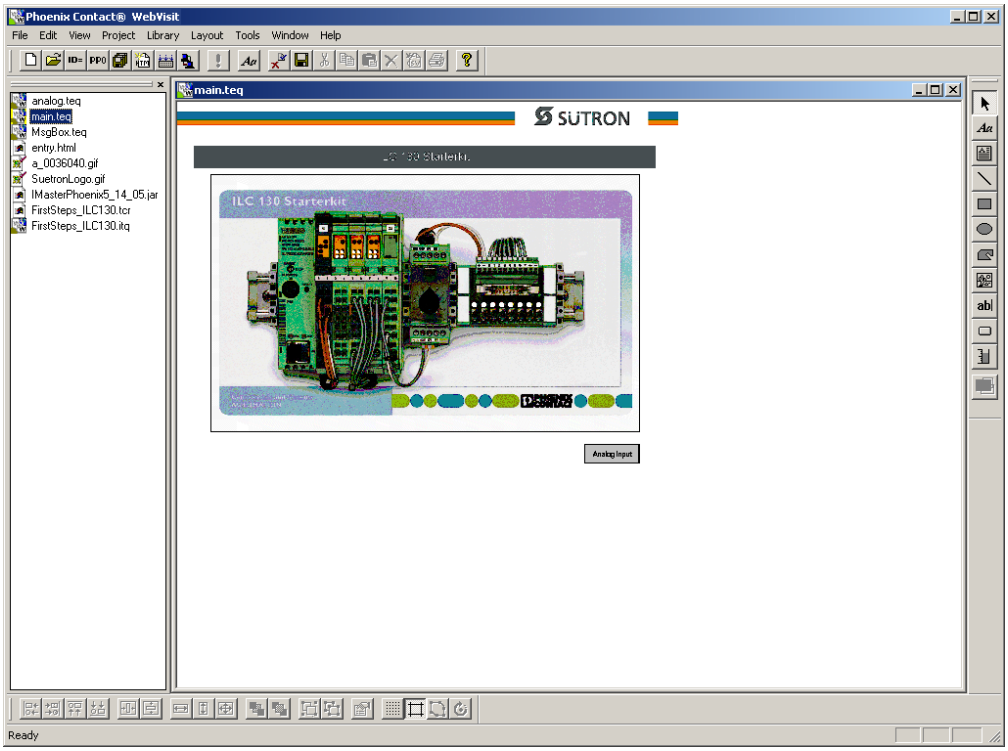

Figure 4-16 Activating the "main.teq" file

If all settings have been made properly, you see the first page of your visualization project.

If an error message is displayed indicating that WebVisit cannot open the "pdd.csv" file when opening the WebVisit project, confirm the error message with "OK".

Link the process data of the controller to the variables from WebVisit.
Proceed as follows:

1. Open the "Project->Teq Configurations" dialog box via the "Project-Phoenix Advanced" menu item.
2. Confirm any further error messages with "OK".

3. In the dialog box, set the path under which you have saved the "FirstSteps_ILC130.mwt" PC WorX Express example project for the starter kit on your PC.

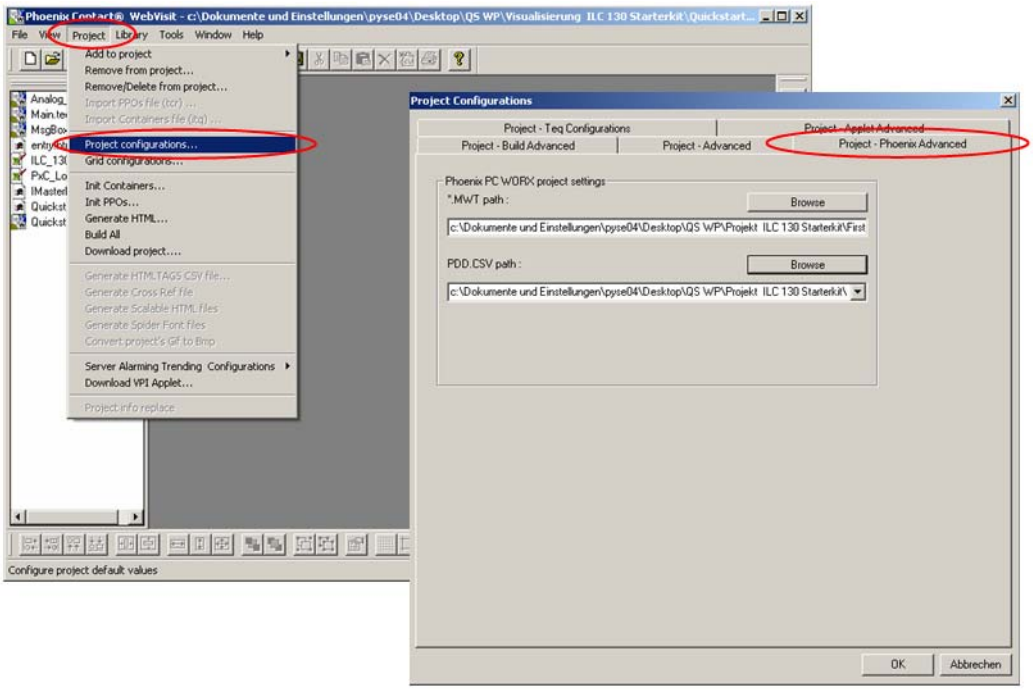

Figure 4-17 Path entry for the example project

If the explorer cannot find the "FirstSteps_ILC130.mwt" file, view all files in the Explorer.

4. Select the "FirstSteps_ILC130.mwt" file and confirm your entry with "OK".

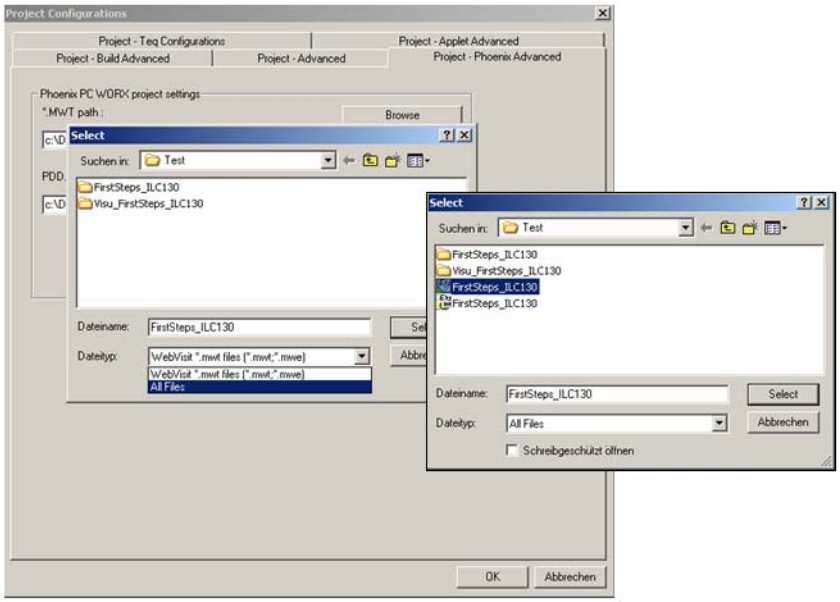

Figure 4-18 Selecting the "FirstSteps_ILC130.mwt" file

4.4.3 Downloading the visualization project to the controller

After you have loaded the visualization project and parameterized it, the next step is to download it to the web server of the controller. To download the visualization project on the I/O controller, proceed as follows:

1. Download the project on the I/O controller via the "Project, Download project..." menu item.
2. In the "Connect" area, set the IP address of the I/O controller under "Server" ("192.168.0.2" in the example).
3. Click on "Connect".

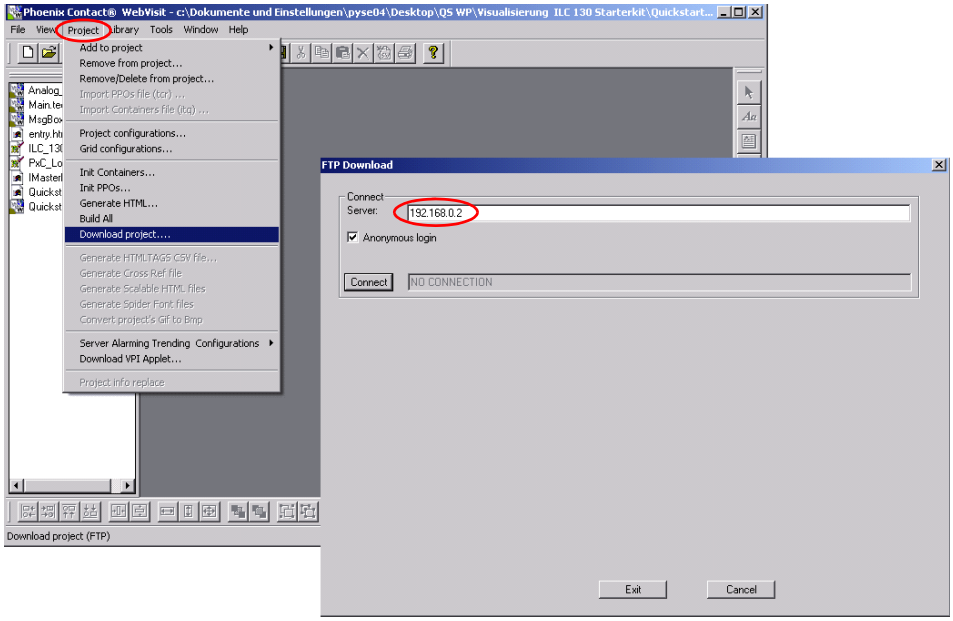

Figure 4-19 Downloading the project on to the I/O controller and setting the IP address

4. Click on "Download Project".
5. Confirm the "Save changes to main.teq?" message and the subsequent message with "OK". The progress bar shows the transmission status.

6. Confirm the message that appears once transmission is complete with "OK".

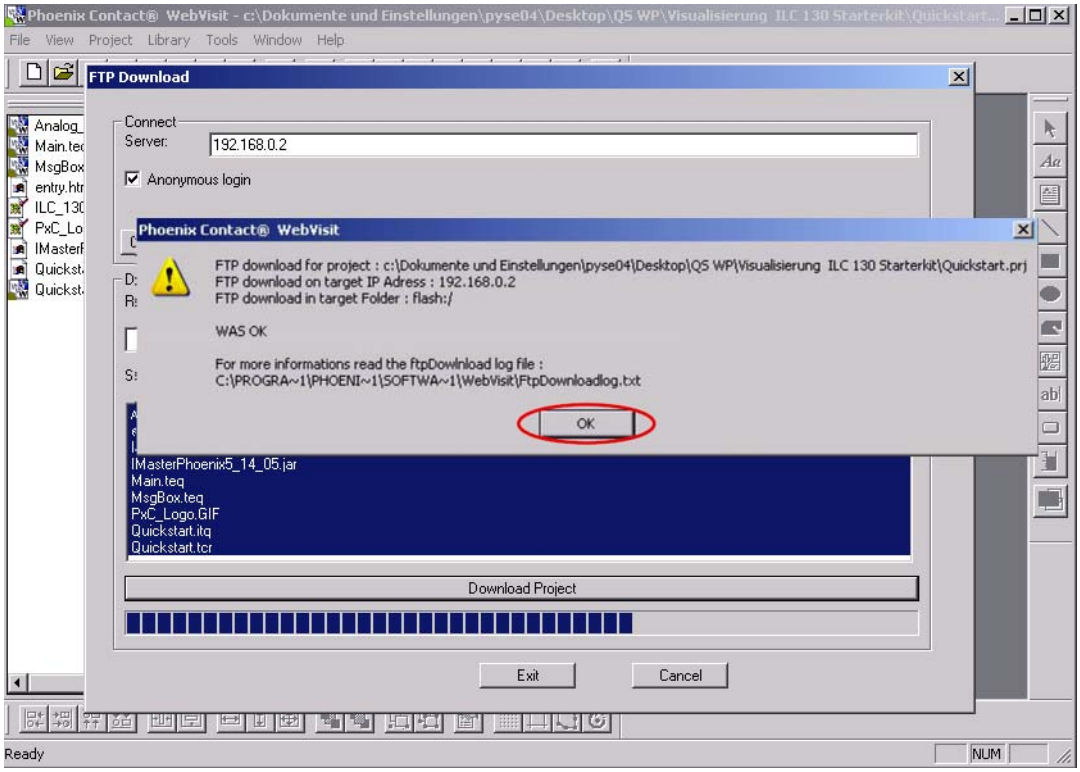

Figure 4-20 Downloading the visualization project

7. Close the window and exit WebVisit.

The visualization project has been downloaded to the I/O controller. The visualization can now be displayed via the web panel.

4.4.4 Web panel display

If all settings have been made properly, your web panel will display the visualization start page after a brief loading time. This includes animated representations of LEDs, which can be activated/deactivated using the switches of the switch module. A button can also be used to call another page of the visualization. This page includes an animated bar graph which represents an analog input value.

1. Switch off the power supply of the web panels and switch it on again.

Figure 4-21 Visualization start page

2. Click the "Analog Input" button to view the visualization of the analog input value.

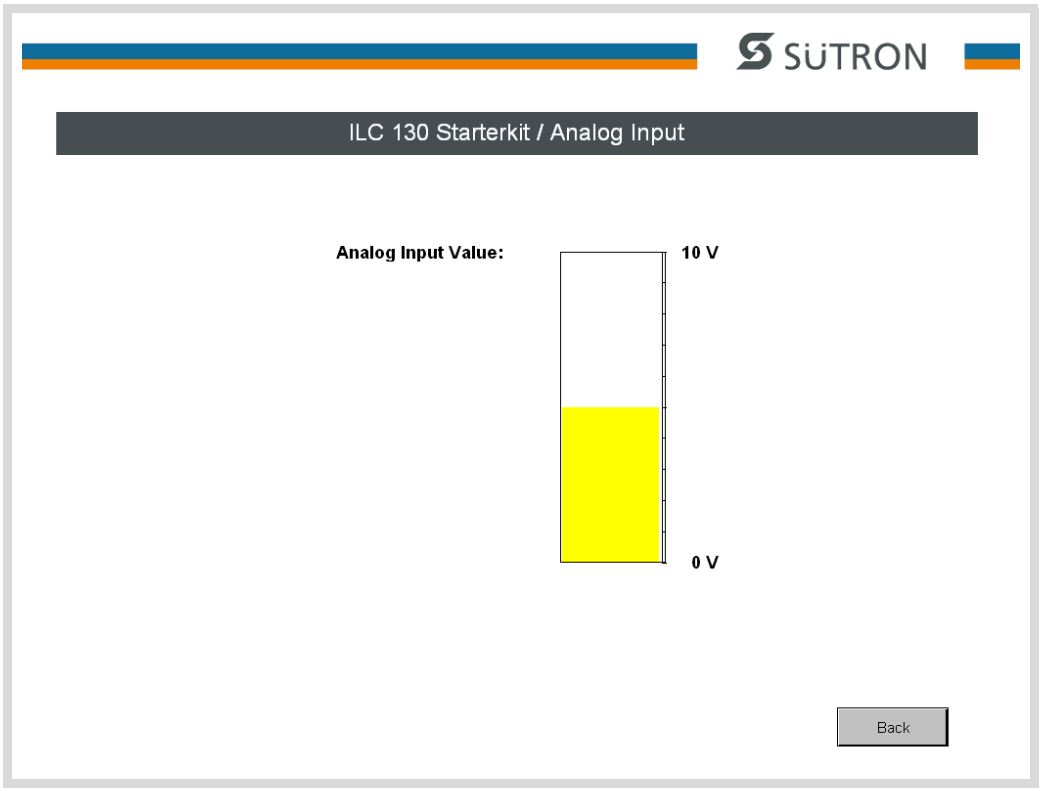

Figure 4-22 Display of an analog input value (Input_Analog variable)

3. Adjust the starter kit potentiometer to modify the level of the bar graph.

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